Activity 7: Follow That Air

Objective: Students will trace the path of outdoor air as it enters the school building.

Duration: 2 class periods

Materials:

- ❑ Worksheet diagram of school ventilation system
- ❑ Red and blue crayons for each student
- ❑ Worksheet of pinwheel diagram on lightweight paper
- ❑ Scissors and thumbtacks
- ❑ Straws

Vocabulary:

- ❑ HVAC system
- ❑ Pathways
- ❑ Ventilation systems
- ❑ Air Flow

Focus Question:

- ❑ How does air get indoors?
- ❑ What are the different means of ventilation in school?
- ❑ Can indoor air be polluted?

Activity Procedures:

First Class Period:

1. Discuss different ways air can enter your school building. Ask students to come up with different places air can enter the school and make a list of suggestions on the board.

2. Copy worksheet #1 of the HVAC and distribute to the class.

3. Instruct the students to color the arrows with the number 1 RED. Explain that these arrows represent air flow indoors through the ventilation system. The students should then color the arrows with the number two BLUE. Explain that these arrows

represent air flow out of the building.

Second Class Period:
Before class: Copy worksheet #2 onto lightweight paper to ensure the pinwheel will turn easily. Take the pinwheel diagram and cut out along the dotted lines. Fold the cut corner down so that the small circle is on top of the center circle. Do this for each corner. After all the small circles are placed over the center circle, place a thumbtack through the middle. Push the thumbtack through the end of a straw so that the paper pinwheel turns easily. Test the pinwheel by placing it in front of a fan or by blowing on it to insure that it moves easily.

1. After discussing different ways air can enter a school, ask students to see how air enters and leaves the classroom. After students have discussed different ventilation areas in the classroom, hold the constructed pinwheels in front of the class. Ask the students if they know what you are holding and if they know how it works. Ask them what makes it move around in a circle and if it can show air working. Ask the students what will happen to the pinwheel when it is working.

2. Hand out the constructed pinwheel to a couple volunteers. Ask students to pick areas around the room where air exits and enters the room. Ask them what will happen if they hold it where there is air flow. Instruct the students to hold the pinwheel near a ventilation source to see what happens.

3. Hand out a copy of worksheet #2 and demonstrate the pinwheel construction with students following along. Tell them to decorate and construct their pinwheels and attach it to a straw. It should move in clockwise and counterclockwise directions.

4. Ask students to take the pinwheels home and investigate ventilation sources in their homes. Ask them to hold it near the source and see if the pinwheels move. If it does, some kind of air flow is occurring. Explain to the students that they need to record three places at home where they detected air flow using the pinwheel and bring their results to class.

Follow-up Questions:

- ❑ How can air enter your school?
- ❑ What are some ways you can detect air flow?